

IN THE SPECIFICATION

Please rewrite the paragraph appearing at page 8, line 17, through page 13, line 19, as follows:

Fig. 1 is a diagram showing the configuration of an image processing apparatus according to a first embodiment of the present invention;

Fig. 2 is a diagram showing an example original image;

Fig. 3 is a flowchart showing the processing performed by a binarizing unit and an area division unit;

Fig. 4 is a graph showing a brightness histogram for the original image;

Fig. 5 is a diagram showing a binary image obtained by binarizing the original image;

Fig. 6 is a diagram showing the state wherein label attachment is performed for the binary image;

Fig. 7 is a diagram showing black areas that are extracted from the original image in accordance with a symbol attribute;

Fig. 8 is a diagram showing symbol areas in the original image;

Fig. 9 is a flowchart showing the processing performed by a symbol, representative color operation unit;

Fig. 10 is a flowchart showing an example method employed for calculating a threshold value T2;

Fig. 11 is a diagram showing the configuration of an image processing apparatus according to a second embodiment of the present invention;

Fig. 12 is a diagram showing a difference between normal symbols and inverted

symbols;

Fig. 13 is a graph showing a brightness histogram for the inverted symbol portion;

Fig. 14 is a diagram showing the configuration of an image processing apparatus according to a third embodiment of the present invention;

Fig. 15 is a diagram showing the configuration according to the third embodiment for expanding compressed data;

Fig. 16 is a flowchart showing the processing performed for the inverted symbol;

Fig. 17 is a diagram showing an example histogram shape;

Fig. 18 is a diagram showing an example method used for calculating a threshold value T2;

Fig. 19 is a diagram used for explaining a case wherein the representative color for a large symbol is calculated and a case wherein the representative color for a small symbol is calculated;

Figs. 20A and 20B are diagrams showing distributions in the RGB space;

Fig. 21 is a diagram for explaining the thinning of a binary image;

Fig. 22 is a graph showing a typical brightness for a symbol area;

Fig. 23 is a diagram showing the results obtained by binarizing an image;

Fig. 24 is a diagram showing the results obtained by binarizing an image;

Fig. 25 is a diagram showing the configuration of an image processing apparatus according to a fourth embodiment of the present invention;

Fig. 26 is a diagram showing the arrangement of the image processing apparatus for expanding compressed data according to the fourth embodiment;

Fig. 27 is a flowchart showing the symbol area detection processing performed

obtained data;

Fig. 39 is a diagram for explaining the color reduction processing performed according to the fourth embodiment of the present invention;

Fig. 40 is a diagram showing the configuration of a modification of the image processing apparatus of the fifth embodiment;

Figs. 41A and 41B are diagrams for explaining the image compression processing performed according to the modification;

Figs. 42A, 42B and 42C are diagrams for explaining the processing performed when binarizing a symbol area according to the modification;

Fig. 43 is a flowchart showing the symbol color extraction processing performed according to the fifth embodiment of the present invention;

Fig. 44 is a flowchart showing the color reduction processing performed according to the fifth embodiment of the present invention;

Fig. 45 is a flowchart showing the color reduction processing performed according to the fifth embodiment of the present invention;

Fig. 46 is a diagram for explaining the shifting portion (gradation) of a symbol that is generated by a scanner;

Fig. 47 is a diagram for explaining the color reduction processing performed according to the fifth embodiment of the present invention;

Fig. 48 is a diagram for explaining the color reduction processing performed according to the fifth embodiment of the present invention;

Fig. 49 is a diagram showing a three-dimensional histogram that represents the shifting portion (gradation) of a symbol that is generated by a scanner; and

Fig. 50 is a diagram for explaining the color allocation processing performed according to the fifth embodiment of the present invention for determining the color of each symbol using symbol cutting information.

according to the fourth embodiment of the present invention;

Fig. 28 is a diagram for explaining the symbol area detection processing performed according to the fourth embodiment of the present invention;

Fig. 29 is a diagram for explaining the symbol area detection processing performed according to the fourth embodiment of the present invention;

Fig. 30 is a diagram for explaining the symbol area detection processing performed according to the fourth embodiment of the present invention;

Fig. 31 is a diagram for explaining the symbol area detection processing performed according to the fourth embodiment of the present invention;

Fig. 32 is a diagram for explaining the symbol area detection processing performed according to the fourth embodiment of the present invention;

Fig. 33 is a diagram for explaining the processing performed for the re-binarizing a symbol area according to the fourth embodiment of the invention;

Figs. 34A, 34B and 34C are diagrams for explaining the symbol painting processing performed according to the fourth embodiment of the present invention;

Fig. 35 is a flowchart for explaining the symbol painting processing performed according to the fourth embodiment of the present invention;

Fig. 36 is a flowchart for explaining the one color extraction processing performed according to the fourth embodiment of the present invention;

Fig. 37 is a diagram for explaining the one color extraction processing performed according to the fourth embodiment of the present invention;

Figs. 38A, 38B and 38C are diagrams for explaining the state wherein the image processing apparatus of the fourth embodiment expands compressed data and combines the

(clean version)

Fig. 1 is a diagram showing the configuration of an image processing apparatus according to a first embodiment of the present invention;

Fig. 2 is a diagram showing an example original image;

Fig. 3 is a flowchart showing the processing performed by a binarizing unit and an area division unit;

Fig. 4 is a graph showing a brightness histogram for the original image;

Fig. 5 is a diagram showing a binary image obtained by binarizing the original image;

Fig. 6 is a diagram showing the state wherein label attachment is performed for the binary image;

Fig. 7 is a diagram showing black areas that are extracted from the original image in accordance with a symbol attribute;

Fig. 8 is a diagram showing symbol areas in the original image;

Fig. 9 is a flowchart showing the processing performed by a symbol, representative color operation unit;

Fig. 10 is a flowchart showing an example method employed for calculating a threshold value T_2 ;

Fig. 11 is a diagram showing the configuration of an image processing apparatus according to a second embodiment of the present invention;

Fig. 12 is a diagram showing a difference between normal symbols and inverted symbols;

Fig. 13 is a graph showing a brightness histogram for the inverted symbol portion;

Fig. 14 is a diagram showing the configuration of an image processing apparatus according to a third embodiment of the present invention;

Fig. 15 is a diagram showing the configuration according to the third embodiment for expanding compressed data;

Fig. 16 is a flowchart showing the processing performed for the inverted symbol;

Fig. 17 is a diagram showing an example histogram shape;

Fig. 18 is a diagram showing an example method used for calculating a threshold value T_2 ;

Fig. 19 is a diagram used for explaining a case wherein the representative color for a large symbol is calculated and a case wherein the representative color for a small symbol is calculated;

Figs. 20A and 20B are diagrams showing distributions in the RGB space;

Fig. 21 is a diagram for explaining the thinning of a binary image;

Fig. 22 is a graph showing a typical brightness for a symbol area;

Fig. 23 is a diagram showing the results obtained by binarizing an image;

Fig. 24 is a diagram showing the results obtained by binarizing an image;

Fig. 25 is a diagram showing the configuration of an image processing apparatus according to a fourth embodiment of the present invention;

Fig. 26 is a diagram showing the arrangement of the image processing apparatus for expanding compressed data according to the fourth embodiment;

Fig. 27 is a flowchart showing the symbol area detection processing performed according to the fourth embodiment of the present invention;

Fig. 28 is a diagram for explaining the symbol area detection processing performed

according to the fourth embodiment of the present invention;

Fig. 29 is a diagram for explaining the symbol area detection processing performed according to the fourth embodiment of the present invention;

Fig. 30 is a diagram for explaining the symbol area detection processing performed according to the fourth embodiment of the present invention;

Fig. 31 is a diagram for explaining the symbol area detection processing performed according to the fourth embodiment of the present invention;

Fig. 32 is a diagram for explaining the symbol area detection processing performed according to the fourth embodiment of the present invention;

Fig. 33 is a diagram for explaining the processing performed for the re-binarizing a symbol area according to the fourth embodiment of the invention;

Figs. 34A, 34B and 34C are diagrams for explaining the symbol painting processing performed according to the fourth embodiment of the present invention;

Fig. 35 is a flowchart for explaining the symbol painting processing performed according to the fourth embodiment of the present invention;

Fig. 36 is a flowchart for explaining the one color extraction processing performed according to the fourth embodiment of the present invention;

Fig. 37 is a diagram for explaining the one color extraction processing performed according to the fourth embodiment of the present invention;

Figs. 38A, 38B and 38C are diagrams for explaining the state wherein the image processing apparatus of the fourth embodiment expands compressed data and combines the obtained data;

Fig. 39 is a diagram for explaining the color reduction processing performed

according to the fourth embodiment of the present invention;

Fig. 40 is a diagram showing the configuration of a modification of the image processing apparatus of the fifth embodiment;

Figs. 41A and 41B are diagrams for explaining the image compression processing performed according to the modification;

Figs. 42A, 42B and 42C are diagrams for explaining the processing performed when binarizing a symbol area according to the modification;

Fig. 43 is a flowchart showing the symbol color extraction processing performed according to the fifth embodiment of the present invention;

Fig. 44 is a flowchart showing the color reduction processing performed according to the fifth embodiment of the present invention;

Fig. 45 is a flowchart showing the color reduction processing performed according to the fifth embodiment of the present invention;

Fig. 46 is a diagram for explaining the shifting portion (gradation) of a symbol that is generated by a scanner;

Fig. 47 is a diagram for explaining the color reduction processing performed according to the fifth embodiment of the present invention;

Fig. 48 is a diagram for explaining the color reduction processing performed according to the fifth embodiment of the present invention;

Fig. 49 is a diagram showing a three-dimensional histogram that represents the shifting portion (gradation) of a symbol that is generated by a scanner; and


Fig. 50 is a diagram for explaining the color allocation processing performed according to the fifth embodiment of the present invention for determining the color of each

symbol using symbol cutting information.

CONCLUSION

Applicant's undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,


Leonard P. Diana
Attorney for Applicant
Registration No. 29,296

FITZPATRICK, CELLA, HARPER & SCINTO
30 Rockefeller Plaza
New York, New York 10112-3801
Facsimile: (212) 218-2200